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Portfolio Strategy

# Has The Magic Formula Lost Its Sparkle?

May 22, 2018 10:07 AM ET | 16 Comments


## Summary

- Joel Greenblatt documented his "Magic Formula" in 2005.
- His strategy showed 24% gains between 1988 and 2009.
- The last 8 years have shown much more ordinary returns.
- You can bring some of the sparkle back by adding a few new factors.

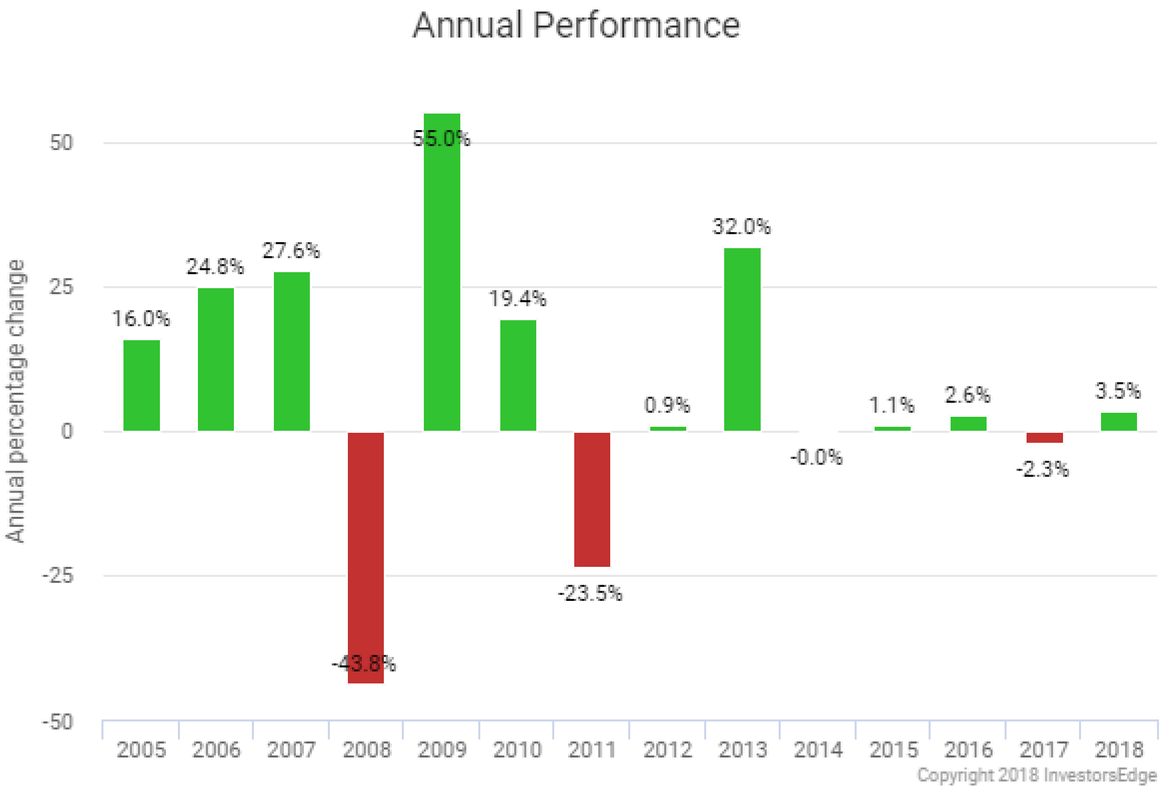

Joel Greenblatt published his magic formula in *The Little Book That Beats The market* in 2005, in which he described a very simple stock selection system that in backtests showed 24% annual returns between 1998 and 2009.

Thousands of websites reference Greenblatt's research and provide stock screeners and tips based on the formula, so it's a popular subject and is enticing to those investors who want to follow a mechanical strategy.

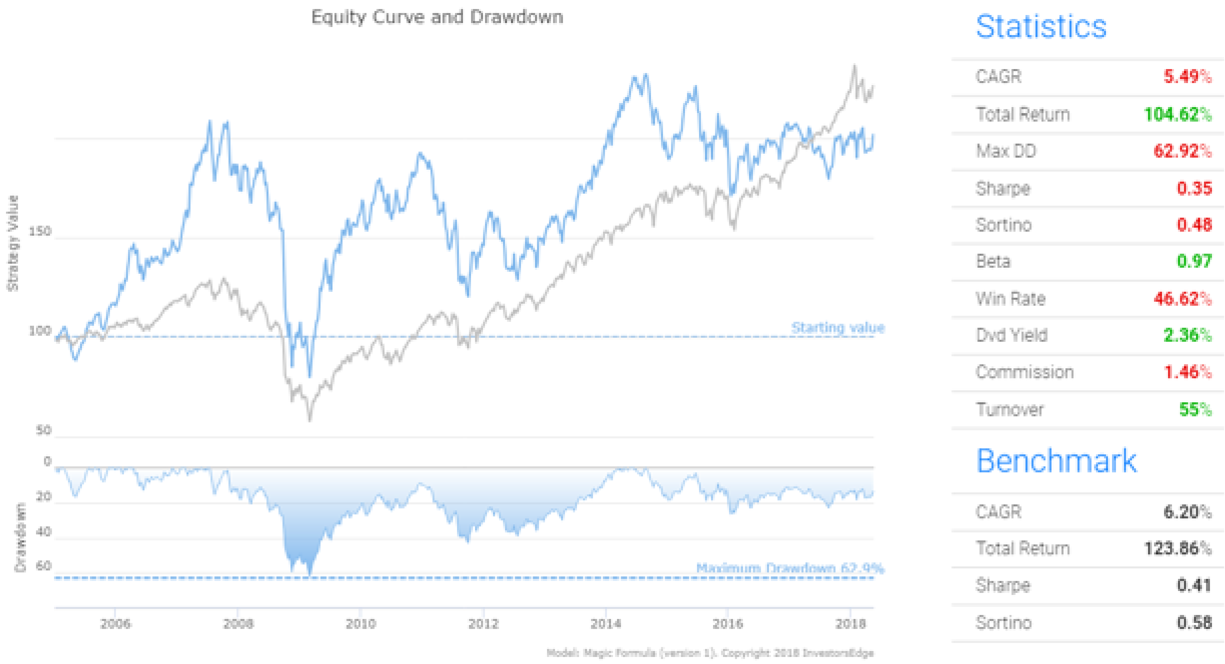
But how has it fared since the book was published in 2005? I ran some research through the InvestorsEdge platform to find out.

## Recent Performance

The polite answer to our performance question is "not that great":




The first few years after the book was published showed on-track returns of 23% or so, 2008 showed an expected drop and 2009 saw the inevitable bounce back as prices and heart rates stabilized. However, from 2010 onwards the strategy has taken a downturn in fortunes that can be seen very clearly when you look at the strategy's equity curve:




You can see the strategy would have returned just 5.5% over the period in question, a significant drop from the expected 24%. The culprit is the last four years where returns have barely broken even.

## How The Strategy Worked

The strategy selects all stocks from the US and discards depository receipts, financials, utilities and any companies valued at less than $50m. It then ranks the resulting list by two factors:

- Earnings Yield
- Return On Capital ((*ROC*))

*Earnings Yield* is calculated as *Ebit/Enterprise Value*, and tells us if a stock is trading at a good price or not.

*Return On Capital* is an efficiency ratio calculated by *Ebit/(Average Total Assets - Average Current Liabilities)* and shows us how efficiently a company utilizes its capital.

Each year the strategy selects the top 30 stocks in the list and holds them for the next 12 months, whereupon it rebalances and selects the top 30 stock from the new list.

So the strategy works on the basic principles that we select the most efficient companies with the cheapest relative valuations - so far so sensible.

## What Went Wrong

One of the key problems with publishing the inner workings of a strategy is that the anomaly that you have discovered stops working.

Sometimes this is because it stops being an anomaly and becomes the default behavior for stocks, often because investors pile in and begin to buy and sell the same stocks at the same time.

2009 also saw a big change in the macroeconomic landscape - an abrupt change in sentiment during the financial crisis saw a whole series of historically profitable trading strategies become obsolete. The "death" (read underperformance) of value strategies in the last 6-7 years is a well-documented phenomenon on SeekingAlpha that the Magic Formula has fallen prey to as well.

Lastly, access to data and investor education has seen the more simplistic strategies relegated to the substitutes bench. It is not rocket science to state that efficient companies that are cheap will do well in the future, and we can identify candidate companies at the press of a button with the latest technologies.



So, can we evolve the Magic Formula to give it back some sparkle?

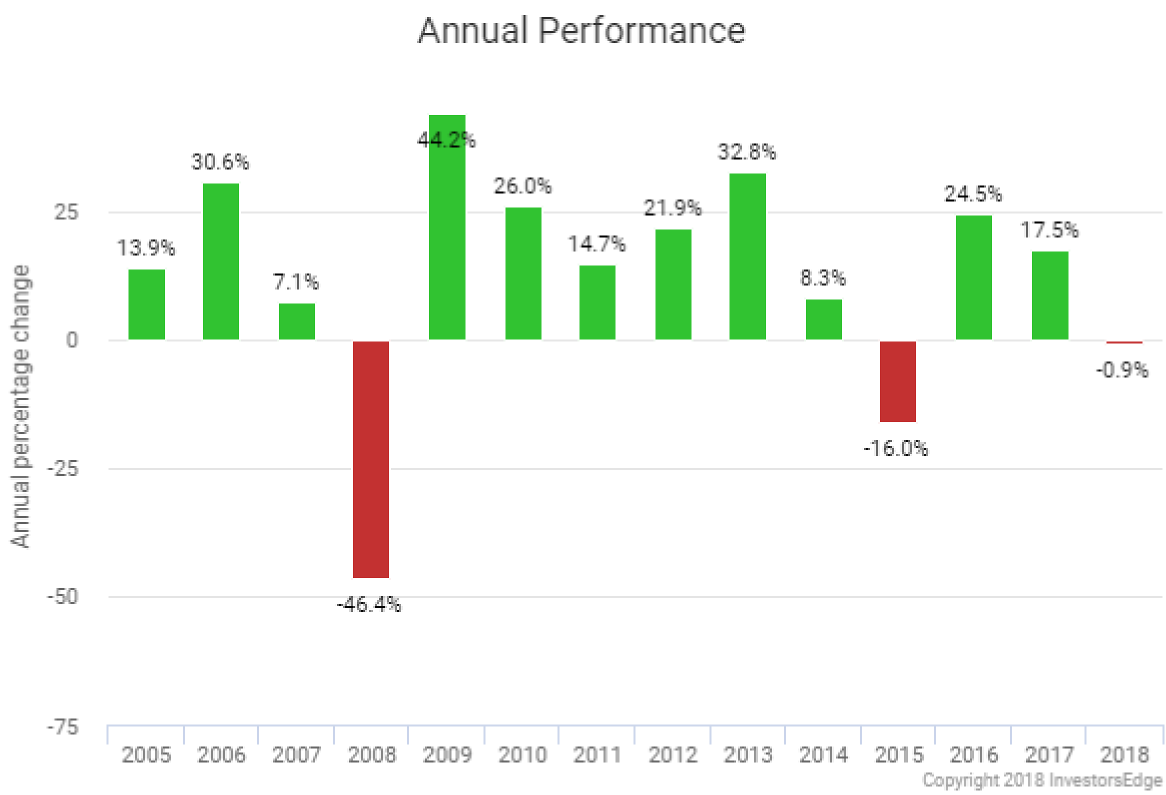
## A New, Improved Magic Formula

Well, yes - sort of. I've made four changes to the Magic Formula to improve returns:

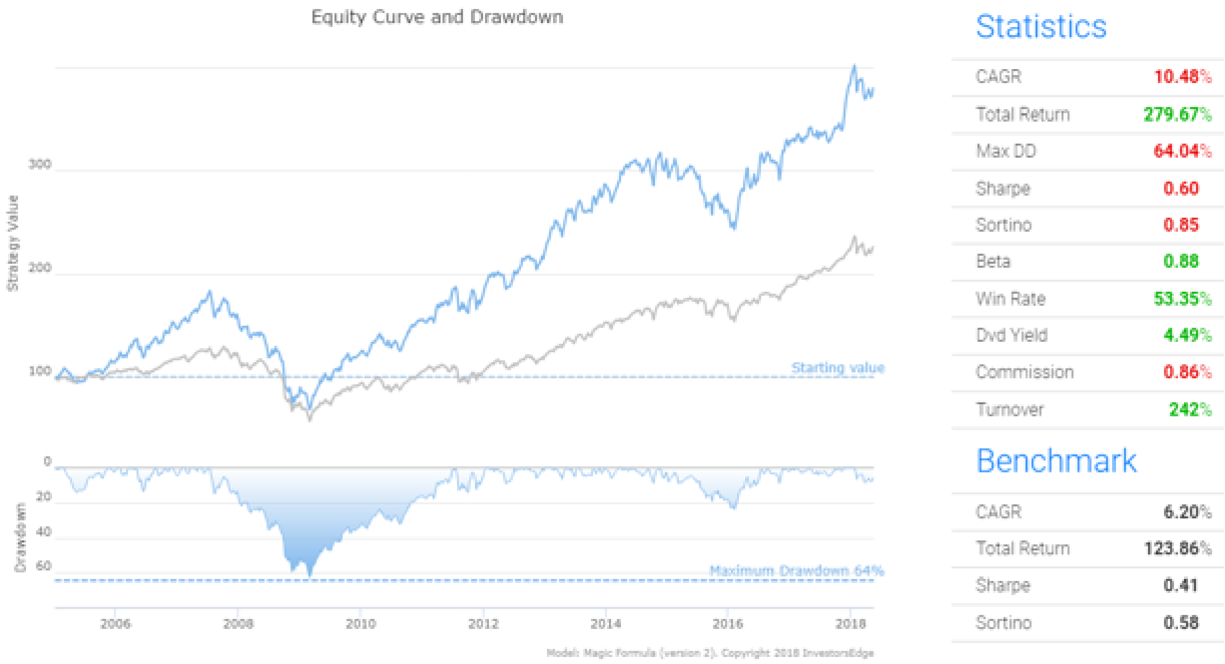
- Drop the number of stocks bought each year from 30 to 20. This focuses the strategy on the most efficient and cheapest stocks.
- Rebalance more frequently. A lot can happen in a year - switching to rebalancing monthly allows stocks with poor results to be swapped with better candidates.

- Require stocks to have a *Piotroski F Score* of 6 or greater. The Piotroski Score is a value of 0 to 9 that assesses the quality of a company's results.
- Add a third ranking factor, *Dividend Yield*. I often find you can use the fact a company pays a dividend as the sign of a healthy balance sheet, and quality dividend stocks have been in great demand over the last few years.

These new factors result in an improved set of results:




The average return throughout the 13-year backtest period was 10.5%, significantly better than the Greenblatt's original version.




## Conclusions

Greenblatt's Magic Formula has shown poor returns since its release in 2005, partly because of a changing investment landscape and partly through the physical act of publication.

While you can evolve the basic concept to improve returns, I've documented other slightly more complex mechanical strategies here that have performed significantly better over the periods discussed here.

What this research does highlight is that strategies of all types, mechanical or other, do stop working, sometimes because of a change to the investing world and sometimes due to the strategy becoming a crowded place to trade in.

**Disclosure:** I/we have no positions in any stocks mentioned, and no plans to initiate any positions within the next 72 hours. I wrote this article myself, and it expresses my own opinions. I am not receiving compensation for it. I have no business relationship with any company whose stock is mentioned in this article.

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## Comments (16)



**suresh.munagala**
Comments (2)

Dec. 07, 2019

Thanks for posting your research .

Greenblatt recommends selecting the stocks from this own website magicformulainvesting.com .

Have you used the stocks from this same website ?

As per the book, he calculates the ROC and Earnings yield differently by making some adjustments.

In one of his recent interviews in a podcast, he suggested this approach again and had a lengthy discussion on this.

I am sure, he would have mentioned had the formula lost his relevance.

Here is the link to the podcast.

podcasts.apple.com/...

Reply

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**Jerry 2019** Jul. 04, 2019

Comments (1)

Could you please recommend some ETFs or funds based on this "magic formula" ?

Reply

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**sailorbob74133** Apr. 01, 2019

Comments (88)

Greenblatt claims in the appendix to his book that the Piotroski score only really works for small cap stocks. Did you find the same with your analysis? By the way, what program do you use for screening / back testing?

Reply

**InvestorsEdge** Apr. 02, 2019

Comments (101)

Author's reply >> We use our own system which allows you to allow "ordinary" investors to backtest their strategies without having to learn how to code - in our view if you can use Excel then you should be able to backtest a strategy.

Here's a link to the Magic Formula strategy if you're interested:

investorsedge.net/...

Thanks,
Liam

Reply

**sailorbob74133** Apr. 03, 2019

Comments (88)

What about for people who do know how to code? I'm a computer programmer.

Reply

**InvestorsEdge**
Comments (101)
Apr. 03, 2019

Author's reply >> Then you know how to analyze data and logically work through how to structure your strategies - we tend to find programmers get a lot out of the platform and take a lot less time to get up to speed with things. There's a free trial and if you like I can jump on a Skype call to take your through the system's capabilities - PM me and I'll set things up.

Thanks
Liam

Reply

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**carnemoida**
Comments (1)
Jan. 23, 2019

Hello!
In his Columbia classes, Joel Greenblatt describes ROC as EBIT / (Net Working Capital + Net Fixed Assets).
Your ROC is equivalent to ROCE (return on capital employed).

Reply • Like (1)

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**acer camp**
Comments (9)
Dec. 23, 2018

Growth stocks have outperformed Value since the 2008/2009 fiasco. This could very well have been the reason for the under-performance of Greenblatt's Magic Formula. At this time of Dec 2018, the market is currently going through its second correction this year. This second correction is far deeper and scarier than the first. I think the market is in the process of washing out the growth stock excesses of the previous decade. If that is the case (and I think it is), Greenblatt's formula could well be on the verge of out-performing for some time to come...The market never stays still and one must always adjust his thinking to how it currently shapes itself.

Reply • Like (2)

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**kflizza**
Comments (14)
Jul. 21, 2018

Thanks for the response. Apropos cycles: funds.gotham.com/...

Reply

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**kflizza**
Comments (14)
Jul. 20, 2018

Interesting article. Adding Pitroski score is definitely an interesting addition. Also, regarding holding period, if you hold in IRAs and the like, that doesn’t matter.

Commissions still matter but there are ways to avoid them. One example is Merrill Lynch if you're a preferred member of Bank of America. Ultimately, one thought is whether underperformance of late is merely part of the cycle. Greenblatt takes about how some periodic underperformance is inevitable to win long term. Every strategy has its ups and downs.

Reply

**InvestorsEdge** Jul. 21, 2018
Comments (101)

Author's reply >> That is true - my real issue with the strategy is its simplicity which almost guarantees these ups and downs.

Every time we put together a strategy we are developing rules to define two things -

1) that this is a quality company to buy (in this case because ROIC is high and profits are high based on its size.

2) that the timing is right because Ebit/EV is low compared to the rest of the market.

I believe that the strategy hasn't worked so well over numerous periods because there is only one timing signal which can spend years being wrong. The addition of the Piotroski F Score improves our quality check and to a certain extent the timing.

Thanks for commenting!

Liam

Reply

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**That MF Guy** May 23, 2018
Comments (29)

I think the strategy from the book is a bit different. He prescribes holding 20-30 stocks, but not all bought at once and held for a year. He recommends buying a block of 5-6 bi-monthly or quarterly, and turning over the block when it hits one year. (sell losers the day prior)

Maybe I misread, but that's the strategy I've been using in my own testing.
See: magicformulamoney.com/...

Either way, thanks for posting your research and commentary. Always good to see critical thought about the Magic Formula.

Reply • Like (2)

**InvestorsEdge** May 23, 2018
Comments (101)

Author's reply >> I've been following your blog for a while - very illuminating!

There are also several different ways of working out the return on capital figure, and I've in the past that they can make a big difference. I meet do a bit more of a deeper dive on return on capital calculations and their differences in another article.

Thanks for commenting.

Liam

Reply

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**InvestorsEdge**
Comments (101)

May 23, 2018

Author's reply >> Hi WinDiddy,

Greenblatt originally designed the holding period to realize losses in the same tax year and profits in the next, so you are right in pointing out that there will be negative tax implications in this version of the strategy.

Taxes on profits are inevitable - what we do have is some control over the timings we pay them. Unfortunately for the original version of the Magic Formula, the holding period just doesn't work anymore so we are left with the choice of not investing or taking the more immediate tax hit.

Thanks for commenting.

Liam

Reply

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**WinDiddy**
Comments (62)

May 22, 2018

With rebalancing so frequently how does this affect your taxable events? Is each rebalance being taxed as short term capitol gain?

Reply

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**InvestorsEdge**
Comments (101)

May 22, 2018

Author's reply >> If anybody is interested in a deeper look at these models, you can find the details on how they work and more in-depth results here investorsedge.net/...

Thanks
Liam

Reply • Like (3)